

DUROX[®] ALUMINA

High Purity Durox[®] Alumina

Materion's Durox[®] family of alumina ceramic materials provides a cost competitive solution to high performance engineered requirements.

Materion has more than 50 years of experience in the ceramics industry. Our Tucson facility has extensive secondary operation machining capabilities, and thick film refractory metallization and subsequent plating options in-house to deliver turnkey components with quick turnaround.



Property		Units	Durox [®] 997*	Durox [®] AL	Durox [®] UHP
			99.7% Al ₂ O ₃	99.8% Al ₂ O ₃	99.9% Al ₂ O ₃
Physical	Color		White	Off White	White
	Density	g/cm ³	3.90	3.94	3.95
	Grain Size	micron (typical)	2	2	1
	Hardness	Rockwell 45N	82	85	85
	Gas Impenetrability	cc/sec He	10 ⁻⁸	10 ⁻⁸	10 ⁻⁸
Thermal	Thermal Conductivity	W/m•K (at RT)	27	30	35
	Coefficient of Thermal Expansion	10 ⁻⁶ /°C (RT to 1000°C)	8.0	8.0	8.0
	Specific Heat	cal/g°C	0.20	0.20	0.20
Mechanical	Flexural Strength (MOR)	kpsi	52	55	55
	Elastic Modulus	GPa (Mpsi)	375 (54.4)	375 (54.4)	375 (54.4)
	Tensile Strength	kpsi	32	40	40
	Compressive Strength	kpsi	300	350	350
	Poisson's Ratio		0.22	0.22	0.22
	Fracture Toughness (K _{Ic})	MPa√m	5	5	5
Electrical	Dielectric Constant	1 MHz (at RT)	9.7	9.7	9.7
	Dielectric Constant	10 GHz (at RT)	9.6	9.6	9.6
	Dissipation Factor	1 MHz (at RT)	0.0001	0.0001	0.0001
	Dissipation Factor	10 GHz (at RT)	0.0001	0.0001	0.0001
	Volume Resistivity	Ω-cm (at RT)	>10 ¹⁵	>10 ¹⁵	>10 ¹⁵
	AC Dielectric Strength	V/mil (6.35mm)	220	220	220

CERAMICS

6100 South Tucson Boulevard
Tucson, AZ 85706-4520
+1 520.746.0251
ceramics@materion.com

MATERION CORPORATION

www.materion.com/ceramics

Typical property values shown. Actual values may vary with size, shape and method of manufacture. Durox is a registered trademark of Materion Brush Inc.

CC-005 04/2014